This species (whether it is so in all I cannot say,) has an enlargement or thickening of the base of the stem, sometimes an inch in diameter, and somewhat in appearance, like the corm of the Indian Turnip, with the little fascicle of roots coming out at the side instead of at the bottom part. It is not unlikely that these may retain sufficient vitality to preserve the plant over winter, as many specimens showing no attachment to the roots of any other plant were attached in a cluster around one of these thickened bases, the upper part of the plant having long since decayed. On cutting one of them open it was found to be as firm and solid as those of a growing plant.

Withering, in his Arrangement of British plants, speaks of this species as being "a destructive weed in Surrey and Essex, highly injurious to the clover crops." Whether it may become so in this country or not, only the future can determine, but no little anxiety and even alarm was felt in the neighborhood, when it became known what the plant was. A single specimen will produce sufficient seed to stock the whole neighborhood, and unless these hardened bases should be found to retain vitality for several years, the early mowing of clover fields will prevent its increase, and probably destroy it entirely.—Isaac C. Martindale, *Camden, New Jersey.*

A list of some of the most interesting species of plants collected in the Indian Territory; by Geo. D. Butler.—[concluded from p. 68.]

Liatris elegans, Willd. Sandy woods.

Liatris punctata, Hook. Dry prairie hills and sulphate flats.

Aster paludosus, Ait. Rich prairies, uncommon.

Aster sericeus, Vent. Sandstone ridges.

Aster anomalus, Engelm. Sandy woods.

Erigeron divaricatum, Mx. Roadsides.

Erigeron tenue, T. & G. Sulphate flats; common.

Chætopappa asteroides, DC. The smallest plant of my acquaintance in this family, and the earliest in bloom. The liguiate flowers are curled back soon after opening. Sandstone hills.

Amphiachyris dracunculoides, DC. The tough, elastic stems and branches make good brooms. Yards, common.

Grindelia lanceolata, Nutt., var. *latifolia*, Engelm. Stem low and simple or sparingly branched (sulphate flats), or tall and widely branched (fields and fence rows); heads large; leaves elliptical, sessile, cuspidate, serrate.

Chrysopsis villosa, Nutt. Sulphate flats.

Heterotheca scabra, DC. Fort Smith.

Silphium scaberrimum, Ell. Low prairies.

Engelmannia pinnatifida, T. & G. Limestone.

Iva ciliata, Willd. Wet places

Iva angustifolia, Nutt. Sulphate flats.

Rudbeckia alismæfolia, T. & G. Prairies, common.

Dracopis amplexicaulis, Cass. Wet prairies.

Helianthus lenticularis, Dougl. Fields, introduced.

Helianthus rigidus, Desf. Prairies

Helianthus mollis, Lam. Prairie knolls.

Coreopsis aristosa, Michx. Low prairies.

Coreopsis lanceolata, var? Every way larger, especially the darker colored achenes. Limestone cliffs.

Coreopsis tinctoria, Nutt. Very common.

Coreopsis grandiflora, Nutt. Prairies, common.

Coreopsis discoidea, T. & G. Pools, on *Cephalanthus*. During the rainy season when the pools are well filled with water, the floating seeds lodge against the *Cephalan-*

thus, and these sprouting, their roots run down enveloping the stem of the shrub with a tangled mass, often for a distance of two feet or even more, presenting a curious sight toward the close of the dry season when the pools have dried up and the *Coreopsis* is in bloom.

Thelesperma filifolium, Gray. Limestone.

Gaillardia lanceolata, Michx. Prairie knolls.

Hymenopappus corymbosus, var. *Nuttallianus*, T. & G. Limestone.

Helenium tenuifolium, Nutt. Introduced.

Leptopoda brachypoda, T. & G. Pools, rather common.

Centaurea Americana, Nutt. Four to seven feet high in fields, in prairies with smaller heads and stems 1–2 feet high, common.

Apogon humilis, Ell. Wet places, common.

Krigia occidentalis, Nutt. Prairies.

Pyrrhopappus Carolinianus, DC. Prairies.

Lobelia appendiculata, DC. The most common Lobelia in this region. Also in Franklin county, Ark., "Near Little Rock and at Memphis" *Engelmann*. (This is the plant referred to in "Additions to the Flora of Arkansas," see BOTANICAL GAZETTE, Vol. 2, p. 104, where it was called *L. breviflora*).

Specularia perfoliata, DC. Rather common.

Specularia Ludoviciana, Torr. The most common species of prairies, woods and sulphate flats.

Specularia leptocarpa, Gray. Sulphate flats and dry hills.

Vaccinium arboreum, Michx. Rocky woods, common.

Ilex decidua, Walt. Rocky streams.

Bumelia lanuginosa, Pers. Dry woods.

Plantago pusilla, Nutt. Very common. Large specimens have toothed leaves.

Plantago heterophylla, Nutt. Sulphate flats, rare.

Plantago Patagonica, var., *gnaphalioides*, Gray. Prairie knolls.

Plantago Patagonica, var., *spinulosa*? Gray. Prairie knolls.

Plantago Patagonica, var., *aristata*, Gray. Sulphate flats.

Androsace occidentalis, Pursh. Common.

Centunculus minimus, L. Sulphate flats.

Hottonia inflata, Ell. Arkansas river.

Bignonia capreolata, L. Red river.

Catalpa bignonioides, Walt. Arkansas river.

Pentstemon gracilis, Nutt. Dry prairies.

Pentstemon laevigatus, Sol., var., *Digitalis*, Gray. Prairies.

Gerardia grandiflora, Benth. Dry woods.

Castilleia purpurea, Nutt. Perennial, stems cæspitose. Not parasitic? Limestone cliffs.

Hedeoma hispida, Pursh. Common.

Salvia azurea, Lam. Prairies.

Monarda fistulosa, L. Rich prairies and thickets.

Monarda Bradburiana, Beck. Cherokee Nation.

Monarda Russelliana, Nutt. Stem simple and erect or slightly branched and decumbent at the base, $1\frac{1}{2}$–3 feet high; leaves few, short-petioled, ovate-lanceolate, rounded at the base, serrate, dark green; whorls always terminal; bracts purple tinged, acute at each end; calyx curved; corolla white, slender, $1\frac{1}{2}$ inch long, smooth, the lower lip dotted with red purple; angles of the stem, margins of the leaves and bracts, and throat and tube of the calyx very pubescent. Corollas slowly centrifugal, so that while any one lasts but 2 or 3 days, a head will be in flower for a month or more.

There are seldom more than 6 flowers expanded at once, usually only two or three. Dry woods.

Monarda aristata, Nutt. Common on limestone.

Monarda punctata, L. Scarce.

Myosotis macrosperma, Engelm. Larger than the very common *M. verna* of which it seems to be a form, but more slender and with larger calyx and nutlets. Alluvial or damp woods, not uncommon.

Heliotropium Indicum, L. Fort Smith, introduced.

Phacelia parviflora, var., *hirsuta*, Gray, *P. hirsuta*, Michx. Thickets, rather frequent.

Phacelia strictiflora, Engelm. and Gray. Sulphate flats, common.

Hydrolea ovata, Nutt. Common in pools, beds of rocky streams in Arkansas, "In La. and Texas."

Gilia coronopifolia, Pers. Thickets and prairies.

Cuscuta inflexa, Engelm Thickets, on herbs and shrubs.

Cuscuta decora, Chois. Prairies.

Cuscuta decora, var., *indecora*, Engelm. Sulphate flats.

Cuscuta arvensis, Beyrich. Low prairies.

Cuscuta cuspidata, Engelm. Prairies.

Cuscuta glomerata, Chois. Rich prairies.

Solanum rostratum, Dunal. Introduced from the western plains.

Physalis lanceolata, var.? *hirsuta*, Engelm. Rough pubescent, erect and branching; leaves oval to oblong, large, entire. Dry soil.

Sabbatia angularis, Pursh. Prairie knolls.

Sabbatia campestris, Nutt. Very common.

Asclepias obtusifolia, Michx. Prairies.

Asclepias stenophylla, Gray. Prairies.

Acerates viridiflora, Ell. Leaves usually lance-ovate to lanceolate.

Acerates longifolia, Ell. Dry soil

Acerates auriculata, Engelm. Rare.

Asclepiodora viridis, Gray. Prairies, common.

Oxybaphus nyctagineus, Sweet. Thickets.

Oxybaphus oblongifolius, Gray. Apparently distinct. High prairies.

Oxybaphus angustifolius, Sweet. Sulphate flats.

Alternanthera Achyrantha, R. Br. Sulphate flats.

Eriogonum longifolium, Nutt. Limestone.

Rumex Engelmanni, Ledeb. Sulphate flats

Phoradendron flavescens, Nutt. Mostly on *Ulmus alata*.

Euphorbia dictyosperma, F. & M. Common.

Euphorbia heterophylla, L. Banks of streams, rare.

Euphorbia petaloidea, Engelm. Limestone.

Jatropha Texana, Mull. Caddo.

Stillingia sylvatica, L. Exclusively in prairies on knolls, not uncommon.

Tragia urticaefolia, Mx. Common.

Croton glandulosus, L. Sandy woods.

Croton capitatus, Michx. Sulphate flats

Croton Lindheimerianus Scheele (1852. Not Torrey in Bot. Bound., nor DC. Prod.; *C. entriguus*, Gray.). Old fields and roadsides, appearing as it introduced, but also occurring rarely in sulphate flats. Also on M., K. & T. R. R., about 7 miles southwest of Fort Scott, Kansas.

Croton monanthogynus, Michx. Arkansas river.

Crotonopsis linearis, Michx. Sandy woods.

Andrachne Ramevicana, Mull Limestone, "In Ark.," *Engelmann*.

Maclura aurantica, Nutt. Common.

Quercus Muhlenbergii Engelm. Limestone.

Castanea pumila, Michx. San Bois Mt and northeastward into Ark. and Mo.

Sagittaria graminea, Michx. Leaves 1–1½ inches wide.

Spiranthes vernalis, Engelm. & Gray. June and July. Much earlier than *S. gracilis?* Prairies.

Cooperia Drummondii, Herbert. Bulb 4–6 inches beneath the surface. I never found it in wet places, but on sulphate flats and dry prairie hills.

Nemastylis celestina? Nutt. Single flowered at the summit, and another *fertile(?)* flower concealed beneath a bract 3–6 inches lower down. Stem very slender. Prairies, *isolated*, uncommon.

Nemastylis acuta? Engelm. & Gray. (*N. gemmiflora?* Nutt.) 2–several flowered. Prairies, common.

Amianthium muscaetoxicum, Gray. Parts of the flower often in fours. Limestone.

Scilla Fraseri, Gray Common.

Allium mutabile, Michx. Prairies, common.

Yucca angustifolia, var., *mollis*, Engelm. Dry hills.

Commelyna angustifolia, Michx. Dry sandy woods.

Tradescantia Virginica, L. Flowers sometimes white and rarely rose colored. A form occurs with flowers about 2 inches in diameter and about 2 weeks earlier, with the wider leaves lineate with glandular dots. Common.

Cyperus rotundus, Willd.

Cyperus acularis, Torr.

Scirpus lineatus, Michx.

Fimbristylis spadicea? Vahl.

Isolepis carinata, H. & A.

Scleria hirtella, Sw.

Carex acuta? L.

Alopecurus aristulatus, Michx. Pools, common.

Aristida purpurea, Nutt. Dry prairies.

Bouteloua hirsuta, Lay. Dry hills.

Gymnopogon racemosus, Beauv. Dry woods.

Tricuspis stricta, Thurb. Low prairies, not uncommon.

Arundinaria tecta, Muhl. Found in bloom April 26th.

Leptarus paniculatus, Nutt. Dry prairies.

Hordeum pusillum, Nutt. Sulphate flats.

Elymus striatus, Willd Common.

Phalaris intermedia, Besc. Common.

Paspalum Walterianum, Schultes. Overflowed situations.

Paspalum Floridanum, var., *glabratum*. Glabrous; spikes thicker and longer; culm stouter. Prairies.

Panicum dichotomum, var , *nitidum*, Gray. Common

Panicum dichotomum, var., *scoparium*, Engelm. (*P. scoparium*, Lam.)

Setaria glauca, Beauv., var. Perennial and stoloniferous; apparently indigenous. Prairies, common.

Rottbellia cylindrica? Chapm. Prairies, common.

Tripsacum dactyloides, L. Low prairies.

Sorghum arenaceum, Chapm. Prairies.

Chcilanthes lanuginosa, Nutt. Dry sandstone.

Ophioglossum vulgatum, L. Rather common.

Isoetes melanopoda, J. Gay.

Isoetes Butleri, Engelm., n. sp. See Bot. Gaz., Vol. 3, No. 1, p. 1.

Nearly all the species mentioned in the above list were verified by Dr. Geo. Engelmann.

[As we have, perhaps thoughtlessly, admitted to our pages articles not very complimentary to Mr. J. C. Arthur, it is but simple justice that the following answer be published.—Eds.]

As Regards the Flora of Iowa.—During the last year several articles* have appeared in print derogatory to the exhibit of the Iowa flora, as shown by my pamphlet, entitled "Contributions to the flora of Iowa." It is due to myself, and to all who may have occasion to use the Catalogue, that these receive some notice.

In the Botanical Gazette for October, 1877, is "An Explanation." It says there has been made "a very unfortunate mistake for the credit of our State Flora, on the part of the authors (it is incomprehensible how I can be spoken of in the plural number) of our Catalogue, who report only 979 plants, while our whole number must be twice as many." Then follows a disparaging comparison with the 2,034 species of the Nebraska Catalogue, in which there is no mention that the latter contains 363 cryptogams, a class of plants not included in the Iowa list. The writer is then charged with gross negligence in preparing the Catalogue, etc., etc.

The facts are these: In the preparation of the Iowa Catalogue no efforts were spared to make it as complete as possible. A tour of the State was made in order to secure a personal consultation with every botanist and an examination of each herbarium then known to the writer. Moreover every precaution was taken to prevent mistakes in the determination. When the evidence of authenticity was not satisfactory, the locality was given in a foot-note, so as to hold the person reporting it responsible. Mere lists without the specimens received but little attention. Such a strict surveillance naturally excluded many names which might otherwise have been used. The object was to make a list of plants *known* to be growing in the State, and to exclude all others however *probable* it might seem that they were natives. Such has also been the aim in making the additions (published in the Proc. Dav. Acad. Nat. Sci.) to the Catalogue. In these addenda names have been expunged, changed, or added, as required by later information. Printed copies are distributed to all Iowa botanists and to such others as desire them.

*See Bot. Gaz. vol. 2, pp. 73, 107, 114 and 143; also Bull. Torr. Bot. Cl., March, 1878.

As regards the method of publishing additions to the State flora, I cannot think that the indiscriminate and irresponsible use of the columns of botanical periodicals (better filled with other matter) for local floras, is at all conducive to accuracy. To make a short and clear proof of this statement, I have tabulated all the additions to the Iowa flora one person has published in this manner; and as this is done through no ill will, but with the best of intentions, all doubts in the discrimination have been resolved in his favor:

	Bot. Gaz. Jan. '77.	Bot. Gaz. June '77.	Bot. Gaz. Oct. '77.	Torr. Bull. Mar. '78.	Total.	Per cent.
Correct and subsequently published..	8	4	0	12	24	28
Correct but already published.....	3	0	0	21	24	28
Doubtfully determined.....	6	2	1	2	11	13
Incorrectly determined.....	5	5	4	4	18	21
Without the scope of the Catalogue..	5	1	1	1	8	10
Total.....	27	12	6	40	85	100

This shows that only 28 per cent. were *bona fide* additions, that an equal number should not have been published, over a fifth were incorrectly named, and 10 per cent. were of plants with which the Catalogue has nothing to do. Truthful information is earnestly desired, but such as the above table shows to have been published is misleading and worse than none.—J. C. Arthur, *Agricultural College, Ames, Iowa.*